Claims

[c1] 1.A photoelectric receiver circuit for converting an optical signal to an electrical signal, comprising:
first and second transimpedance amplifiers,
a photodiode having a first end connected to an inverting input of the first transimpedance amplifier and a second end connected to an inverting input of the second transimpedance amplifier,
a differential amplifier having inputs, AC coupled, to outputs of the first and second transimpedance amplifiers, and
wherein when higher and lower voltages are respectively applied to the non-inverting inputs of the first and second transimpedance amplifiers, a substantially constant bias voltage is maintained on the photodiode.

[c2] 2.The photoelectric receiver circuit of claim 1 in which the transimpedance amplifiers each comprise an operational amplifier having an inverting input, a non-inverting input and an output, and a feedback resistor connected between the inverting input and the output.

[c3] 3.The photoelectric receiver circuit of claim 2 comprising a DC current source supplying a DC current to the inverting input of each operational amplifier.

[c4] 4.The photoelectric receiver circuit of claim 2 wherein at least one of the feedback resistors is a variable resistor.

[c5] 5.The photoelectric receiver circuit of claim 4 wherein both of the feedback resistors are variable resistors.

[c6] 6.The photoelectric receiver circuit of claim 3 wherein the level of DC current applied to each inverting input is controlled by the output of the respective transimpedance amplifiers through a low pass filter.

[c7] 7.An optical transceiver comprising a photoelectric receiver circuit for converting an optical signal to an electrical signal, the photoelectric receiver circuit comprising:
first and second transimpedance amplifiers,
a photodiode having a first end connected to an inverting input of the first

transimpedance amplifier and a second end connected to an inverting input of the second transimpedance amplifier, and

a differential amplifier having inputs, AC coupled, to outputs of the first and second transimpedance amplifiers,

two voltages for applying a bias voltage to the photodiode,

wherein when higher and lower voltages are respectively applied to the non-inverting inputs of the first and second transimpedance amplifiers, a substantially constant bias voltage is maintained on the photodiode.

[c8] 8.The optical transceiver of claim 7 in which the transimpedance amplifiers each comprise an operational amplifier having an inverting input, a non-inverting input and an output, and a feedback resistor connected between the inverting input and the output.

[c9] 9.The optical transceiver of claim 8 comprising a DC current source supplying a DC current to the inverting input of each operational amplifier.

[c10] 10.The optical transceiver of claim 8 wherein at least one of the feedback resistors is a variable resistor.

[c11] 11.The optical transceiver of claim 10 wherein both of the feedback resistors are variable resistors.

[c12] 12.The optical transceiver of claim 9 wherein the level of DC current applied to each inverting input is controlled by the output of the respective transimpedance amplifiers through a low pass filter.